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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,932	05/29/2001	Andrew C. Myers	053683-5001	6575

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EXAMINER

SHIN, KYUNG H

ART UNIT PAPER NUMBER

2143

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/866,932	MYERS ET AL.	
	Examiner	Art Unit	
	Kyung H Shin	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/29/01, 12/30/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responding to application papers dated 5/29/2001
2. Claims 1-17 are pending. Independent claims are 1, 2, 3, 13, 14 and 17.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-6, 10-17** are rejected under 35 U.S.C. 102(e) as being unpatentable over **Bruno et al.** (US Patent No. 6,614,765 B1: Methods and systems for dynamically managing the routing of information over an integrated global communications network, Filed Oct. 7, 1997).

Regarding Claim 1, Bruno discloses an overlay on a wide area network, wherein the wide area network includes at least one backbone network, comprising a processor

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coupled to the backbone network, wherein said processor contains instructions which, when executed by said processor, cause said processor to optimize real time performance of data delivery from the processor to another processor on the wide area network. (see Bruno col. 2, lines 10-22)

Regarding Claims 2, 17, Bruno discloses a method of selecting an optimum route from a first processor to a second processor in a wide area network and of selecting an optimum route from a third processor to a fourth processor in the wide area network, comprising:

- selecting a first characteristic to be optimized in the route between the first processor and the second processor; (see Bruno col. 8, lines 31-35)

- measuring the characteristic on a first route coupling the first processor to the second processor; measuring the characteristic on a second route coupling the first processor to the second processor; (see Bruno col. 5, lines 57-63; col. 6, lines 42-45: routes are evaluated)

- selecting from the first route and the second route, the route having the best performance based on the first characteristic; (see Bruno col. 6, lines 42-45)

- selecting a second characteristic to be optimized in the route between the third processor and the fourth processor; (see Bruno col. 8, lines 39-43)

- measuring the characteristic on a third route coupling the third processor to the fourth processor; measuring the characteristic on a fourth route coupling the third

processor to the fourth processor; (see Bruno col. 5, lines 57-63; col. 6, lines 42-45: routes are evaluated) and
selecting from the third route and the fourth route, the route having the best
performance based on the second characteristic. (see Bruno col. 6, lines 42-45)

Regarding Claim 3, Bruno discloses a method of optimizing at least two routes in a wide area network, comprising optimizing a first route based on a first characteristic; and optimizing a second route based on a second characteristic. (see Bruno col. 8, lines 31-35; col. 8, lines 39-43)

Regarding Claim 4, Bruno discloses the method of claim 3, wherein the characteristic is a performance criterion. (see Bruno col. 8, lines 43-50)

Regarding Claim 5, Bruno discloses the method of claim 4, wherein the performance criterion is throughput and throughput is to be maximized. (see Bruno col. 8, lines 39-43)

Regarding Claim 6, Bruno discloses the method of claim 4, wherein the performance criterion is latency and latency is to be minimized. (see Bruno col. 1, lines 50-54)

Regarding Claim 10, Bruno discloses the method of claim 4, wherein the performance criterion is network hop count and network hop count is to be minimized. (see Bruno col.

8, lines 31-35)

Regarding Claim 11, Bruno discloses the method of claim 4, wherein the performance criterion is processor hop count and processor hop count is to be minimized. (see Bruno col. 8, lines 39-43)

Regarding Claim 12, Bruno discloses the method of claim 3, wherein the characteristic is a combination of at least two performance criteria. (see Bruno col. 2, lines 28-35)

Regarding Claim 13, Bruno discloses a method for coupling nodes of an overlay network on a wide area network, wherein the wide area network includes a plurality of component networks, comprising:

coupling a node to a first local area network near a first peering point of the first component network; coupling a node to a second local area network near a first peering point of the second component network; coupling a node to the first local area network near a second peering point of the first component network; and coupling a node to a stub network. (see Bruno col. 5, lines 22-32: combination of all types of networks including ISP type networks).

Regarding Claim 14, Bruno discloses a method for finding a route having optimum throughput on a computer network, comprising:

determining a size of a message sent along the route; (see Bruno col. 1, lines 35-41)

determining a delay time required to pass a small amount of data along the route; (see Bruno col. 8, lines 35-39)

determining a duration of time required to pass the message along the route; and calculating throughput of the route from message size, delay time, and duration. (see Bruno col. 8, lines 9-20)

Regarding Claim 15, Bruno discloses the method of claim 14, wherein determining a delay time, further comprises:

measuring a delay time for a plurality of data passes along the route; calculating a mean absolute underestimated error for the plurality of delay time measurements; and selecting a delay time that minimizes the mean absolute underestimated error. (see col. 6, lines 38-45)

Regarding Claim 16, Bruno discloses the method of claim 14, wherein determining throughput, further comprises:

measuring a throughput for a plurality of data passes along the route; and averaging the plurality of measured throughputs while weighting recent measurements more than earlier measurements. (see Bruno col. 6, lines 38-45)

Claim Rejection – 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruno et al. (US Patent No. 6,614,765) in view of **Ramanathan et al.** (US Patent No. 5,913,041: System for determining data transfer rates in accordance with log information relates to history of data transfer activities that independently stored in content servers).

Bruno discloses a system to optimize the routed communications path for data transferred between two network nodes (i.e. processors) based on multiple performance criteria. (see Bruno col. 2, lines 28-35: “ ... *The routing processor then determines a transmission path for routing the information through the packet network based on the ... characteristics stored in the memory, ...* .”)

Regarding Claim 7, Bruno does not disclose a performance criteria designated as a variation in throughput. However, Ramanathan discloses the method of claim 4, wherein the performance criterion is variation in throughput and variation in throughput is to be minimized. (see Ramanathan col. 6, line 65 - col. 7, line 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bruno with the capability to process the performance criteria as taught by Ramanathan. One of ordinary skill in the art would have been motivated to employ the capabilities in

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Ramanathan in order for variation in throughput to utilize multimedia type (large message size) network traffic. (see Ramanathan col. 3, lines 19-24: “ ... *evaluate the performance of transfers to a selected subset of the remote sites. Performance evaluation is based upon the calculation of data throughput ... transfer sizes and times.*”) Further, it would extend optimization capabilities of the Bruno's routing processor in a large communications network.

7. **Claims 8, 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruno et al. (US Patent No. 6,614,765) in view of **Nowatzky et al.** (US Patent No. 6,081,844: Point-to-point interconnect communications utility).

Regarding Claim 8, Bruno does not disclose a performance parameter designated as a variation in latency. However, Nowatzky discloses the method of claim 4, wherein the performance criterion is variation in latency and variation in latency is to be minimized. (see Nowatzky col. 13, lines 3-8) It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bruno with the variation in latency as taught by Nowatzky. One of ordinary skill in the art would have been motivated to employ the capabilities in Nowatzky in order to enhance optimization of routing in a global communications network with traffic intensive applications. (see Nowatzky col. 2, lines 22-27: “ ... *provide a method and apparatus for conveying information between nodes ... for use in ... more traffic-intensive ... applications.*”)

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Regarding Claim 9, Bruno does not disclose a performance parameter designated as cost. However, Nowatzky discloses the method of claim 4, wherein the performance criterion is cost and cost is to be minimized. (see Nowatzky col. 6, lines 22-25) It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bruno with the performance parameter cost as taught by Nowatzky. One of ordinary skill in the art would have been motivated to reduce cost in Nowatzky in order to enhance optimization of routing in a global communications network with traffic intensive applications. (see Nowatzky col. 2, lines 22-27: “ ... *provide a method and apparatus for conveying information between nodes ... for use in ... more traffic-intensive ... applications.*”)

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung H Shin whose telephone number is 703-305-0711. The examiner can normally be reached on 9 am - 7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on 703-308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KHS

Kyung H Shin
Patent Examiner
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Aug. 30, 2004



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